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Lectotypification of three Iberian endemic species belonging to monotypic genera described by Cosson

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Abstract

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Three lectotypes are here designated for *Euzomodendron bourgaeanum* Coss., *Guiraoa arvensis* Coss. and *Laserpitium scabrum* Cav. (*Guillonea scabra* (Cav.) Coss.), whose genera are monospecific and endemic to the Iberian Peninsula. The selected types of the two former species are kept at P and belong to Cosson's personal herbarium, whilst the last one is kept at MA and belongs to the historical herbarium of Cavanilles.

Keywords: endemic genera, *Euzomodendron, Guiraoa, Guillonea,* typification, Cosson

Resumen

Buira, A., Quintanar, A. & Aedo, C. 2015. Lectotipificación de tres especies endémicas de la Peninsula Ibérica, pertenecientes a un género monotípico descrito por Cosson. *Anales Jard. Bot. Madrid* 72(2): e024.

Se designan los lectótipos de *Euzomodendron bourgaeanum* Coss., *Guiraoa arvensis* Coss. y *Laserpitium scabrum* Cav. (*Guillonea scabra* (Cav.) Coss.), cuyos géneros son monoespecíficos y endémicos de la Península Ibérica. Los tipos seleccionados para las dos primeras especies se encuentran en P y pertenecen al herbario personal de Cosson, mientras que el de la última se encuentra en MA y pertenece al herbario histórico de Cavanilles.

Palabras clave: géneros endémicos, *Euzomodendron, Guiraoa, Guillonea,* tipificación, Cosson

INTRODUCTION

The Iberian flora includes 24 endemic or subendemic genera, most of them monospecific (Aedo & al., 2013). During the development of the *Flora iberica* project, we realised that many of these genera had yet to be typified. Since the monospecific genus *Lapiedra* Lag. has already been typified by Estebánez & al., 2008, we have focused, in the present survey, on three endemic genera originally described by Ernest Saint Charles Cosson (1851-1852) as monotypic: *Euzomodendron* Coss. (1852: 144), *Guillonea* Coss. (1851: 109), and *Guiraoa* Coss. (1851: 97). According to the ICN (Art. 40.3), the lectotypification of each single species cited within these three genera (*E. bourgaeanum* Coss. (1852: 145), *G. scabra* (Cav.) Coss. (1851: 109), and *G. arvensis* Coss. (1851: 98), respectively) implicitly entails their typification. However, none of them have yet been typified. Therefore, the respective typifications are essential to firmly establish the nomenclature of such names.

Euzomodendron bourgaeanum Coss., Notes Pl. Crit.: 144 (1852)

The genus *Euzomodendron* belongs to the *Cruciferae* and *E. bourgaeanum* is hitherto the only known species within this genus. It is a chamaephyte occurring through a small sub-desertic area in southeastern Spain that ranges from Gádor to the Alhamilla Mountains in the province of Almería. This species grows on marly or gipsaceous scarcely vegetated badlands, between 100 and 500 m above sea level. Flowering occurs between March and May, but it can stretch on from December to August depending on the rainfall of the year (López González, 1993). The main characters of *E. bourgaeanum* are: dehiscent, glabrous or sparsely hairy siliqua, with the lower part much longer than the upper one; usually more than 4 seeds per locule, conspicuously winged seeds, and generally divided leaves.

Molecular studies (Warwick & Black, 1994; Crespo & al., 2000) pointed out a close relationship between *Euzomodendron* and *Vella* Linnaeus (1753: 641). Although molecular data plus an analysis of unique shared features (e.g. lengthy connate inner stamens, navicular fruit valves and basic chromosome number x=17) led Warwick & Al-Shehbaz (1998) to unite both genera in *Vella,* Crespo & al. (2000) recognized *Euzomodendron* as an independent genus sister to *Vella* on the basis of combined parsimony analysis of nuclear ribosomal internal transcribed spacer (ITS) and morphologic characters. These results were also supported by some morphological autapomorphies of *Euzomodendron* (lengthy petiolate and pinnate leaves, long, linear-lanceolate, and flattened siliqua) as well as other morphological characters (lacking stipules, flattened and broadly winged seeds, which are numerous in each locule).

Despite being included as an additional species in this genus, *Euzomodendron longirostre* (Boiss.) Pau (1922: 20) was later considered to belong to the genus *Coincya* (*C. longirostra* (Boiss.) Greuter & Burdet in Greuter & Raus (1983: 87); Leadlay, 1993).

TYPIFICATION

Ind. loc.: "In calcareis salsuginosis Hispaniae orientalis australioris, in ditione Almeriensi ad basim montis Sierra de Gador inter oppida Santa Fe et Huesica (E. Bourgeau, pl. Esp. n.° 1058)."

Type: SPAIN. Almería. Between Santa Fe de Mondújar and Huécija (Huesica?), 36°58′N, 2°31′W, E. Bourgeau s.n., 7 May 1851 (Lectotype designated here: P 5341211,

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Fig. 1. **a**, lectotype of *Euzomodendron bourgaeanum* (P 5341211) (http://coldb.mnhn.fr/catalognumber/mnhn/p/p05341211); **b**, lectotype of *Guiraoa arvensis* (P 5413892) (http://coldb.mnhn.fr/catalognumber/mnhn/p/p05413892); **c**, lectotype of *Laserpitium scabrum* (current name *Guillonea scabra*) (MA 151017).

Fig. 1a; isolecto-: P 4655816 photo!, P 5341210 photo!, B 10 0249565 photo!, K 653945 photo!, K 653946 photo!).
Ic.: Gómez-Campo in Castrov. & al. (eds.), Fl. Iber. 3: 345 lám. 128.
Current accepted name: *Euzomodendron bourgaeanum* Coss.

The protologue of the species refers to number 1058 of the collection "Plantes d'Espagne" of 1851, collected by E. Bourgeau. Several specimens of this gathering were located at P, B, and K herbaria. We choose as lectotype of *E. bourgaeanum* the specimen kept at P (P 5341211), which belonged to E.S.-Ch. Cosson's personal herbarium. It consists of two fructified fragments which unequivocally belong to *E. bourgaeanum*. The rest of the duplicates have also mature fruits and are well conserved.

Guiraoa arvensis Coss., Notes Pl. Crit. 98 (1851)

Guiraoa comprises the Iberian endemic of *Cruciferae, G. arvensis*. This species grows on ruderal and uncultivated areas, generally on gipsaceous soils, between 30 and 300 m above sea level, in southeast Spain, from Alicante to Almería, with a further single northern population in Valencia. Its flowers usually bloom between March and May (Gómez Campo, 1993). The morphology of the fruits of *Guiraoa* clearly differentiates this genus from other *Cruciferae:* silicula has two well differentiated carpels, the lower one is obconic or cylindrical, dehiscent and generally bilocular with a single seed per locule, while the upper one is globular, conspicuously bigger than the lower one, with eight winged ribs, indehiscent, and bilocular with one or two seeds.

TYPIFICATION

Ind. loc.: "In arvis regni Murcici, prope Jumilla (A. Guirao)."
Type: SPAIN. Murcia. Jumilla, 38°28′N, 1°19′W, *A. Guirao s.n.*, Jul 1850 (lectotype designated here: P 5413892, Fig. 1b, ex herb. Coss.; isolecto-: P 5413896 photo!).
Ic.: Gómez-Campo in Castrov. & al. (eds.), Fl. Iber. 3: 434 lám. 162.
Current accepted name: *Guiraoa arvensis* Coss.

In the protologue of *G. arvensis,* E.S.-Ch. Cosson (1851) mentioned some material collected by A. Guirao in southeastern Spain. A. Guirao (?-1890) was a Spanish naturalist who was in touch with important botanists of his time, Graells and Willkomm among them. These authorities used their collections from southeastern Spain. His personal herbarium was unfortunately lost, but a considerable extent of it remained within the collections of the aforementioned botanists, nowadays kept at COI and MA.

A specimen from E.S.-Ch. Cosson's personal herbarium collected by A. Guirao on the date and location mentioned in the protologue was located at P herbarium (P 5413892). Among the studied materials, it must be undoubtedly chosen as lectotype of this taxon. Another specimen located at P (P 5413896) is certainly a duplicate. Although it has a printed stencil corresponding to an exsiccata of 1849, we think it was collected at the same time as the former. Both specimens consist of fructified branches with flowers and well developed fruits which, unequivocally, belong to *G. arvensis*. We also checked any additional specimen collected by A. Guirao and kept at MA, COI and Real Colegio Alfonso XII Herbarium (Carrasco, 2001), but all of them were collected after the date indicated in the protologue of the species.

Laserpitium scabrum Cav., Icon. 2: 72, tab. 190 (1793).

Guillonea belongs to the *Umbelliferae* family and *G. scabra* is currently the only species within this genus. It has a wide area in southeastern Spain ranging the coastal provinces from Castellón to Cádiz, including also some inland provinces (Ciudad Real, Jaén, Albacete, Teruel, and Cuenca). This species grows in Mediterranean scrubs, usually dominated by rosemary and thyme, and pine-wood clearings, on calcareous-clayey soils, usually between 200 and 1200 m above sea level. The flowering period is normally between July to October (Montserrat, 2003). *Guillonea scabra* was originally described as *Laserpitium scabrum* by A.J. de Cavanilles (1793: 72). Both genera, *Guillonea* and *Laserpitium,* have mericarps with 4 widely winged secondary ribs. *Guillonea* has densely hairy mericarps with 5 prominent primary ribs and entire ovate petals, while *Laserpitium* shows little prominent ribs, obovate incised petals, and glabrescent mericarps.

At the same time that E.S.-Ch. Cosson combined *G. scabra,* he suggested *Laserpitium canescens* Boiss. could be closely related, even if no formal synonymization was proposed. Later, J.M.C. Lange (1838) considered both as different species within *Guillonea, G. scabra* and *G. canescens* (Boiss.) Lange. The current taxonomic treatment (Montserrat, 2003) considers both taxa as subspecies of *G. scabra*. *Guillonea scabra* subsp. *scabra* lives throughout the eastern part of the species distribution area, while *G. scabra* subsp. *canescens* (Boiss.) Nyman occupies the southern part. The type of Boissier's taxon was selected by H.M. Burdet & al. (1991: 590-591), while Cavanilles' taxon remains untypified.

TYPIFICATION

Ind. loc.: "Habitat in collibus prope Cati, copiose vero in viciniis Villafames."
Type: SPAIN. Castellón. Between Catí and Villafamés, near Els Ibarsos (Ybarzos?), 40°13′N, 0°4′W, *A.J. Cavanilles s.n.*, 5. Sep.1791 (Lectotype designated here: MA 151017!).
Ic.: P. Monts. in Castrov. & al. (eds.), Fl. Iber. 10: 382 lám. 122.
Current accepted name: *Guillonea scabra* (Cav.) Coss.

In this case, A.J. Cavanilles' protologue of *Laserpitium scabrum* included an original illustration of the species. Nevertheless, we located a single original specimen kept at MA that belonged to A.J. Cavanilles' personal herbarium, which has priority as lectotype (ICN art. 9.12). It contains six labels, two of them handwritten by A.J Cavanilles with the species description and the indication of habitat and location. It agrees with the protologue: "Habitat in collibus prope Cati, copiose vero in viciniis Villafames". Another label, written by G. López, notes its identity as type material, although formal typification has not yet been published (Garilleti, 1993). The specimen consists of one inflorescence and infrutescence with well-developed fruits.

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